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TECHNICAL MEMORANDUM

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REGISTERED GEOLOGIST
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Date Signed 7/16/20
ARIZONA, U.S.A.
Exp. 9/30/21

TO: Florence Copper Inc.
Richard Tremblay, Vice President Operations

FROM: Haley & Aldrich, Inc.
Mark Nicholls, R.G.

SUBJECT: Summary of Potential Post-Rinsing Water Quality Rebound Effects at the PTF Wellfield

Introduction

Florence Copper Inc. (Florence Copper) operates the pilot-scale Production Test Facility (PTF) wellfield for the purpose of demonstrating the feasibility of In-Situ Copper Recovery (ISCR) methods to recover copper from the Poston Butte copper deposit in Florence, Arizona. The PTF is authorized by Temporary Aquifer Protection Permit (APP) No. P-106360 issued by the Arizona Department of Environmental Quality (ADEQ) and Underground Injection Control (UIC) Permit No. R9UIC-AZ3-FY11-1 issued by the United States Environmental Protection Agency (USEPA). Florence Copper has submitted applications to ADEQ and USEPA for APP and UIC permits authorizing construction and operation of commercial-scale ISCR facilities at the Florence Copper site. The applications are pending at this time.

In preparation for the planned commercial-scale ISCR operations, Florence Copper has committed to demonstrate that the bedrock oxide formation at the PTF wellfield can be rinsed to meet water quality wellfield closure criteria established in Section 2.9.2 of the Temporary APP.

Section 2.9.2 of the Temporary APP defines the rinsing process and closure criteria established for closure of the PTF wellfield. This includes a period of post-rinsing monitoring to evaluate potential rebound of water quality constituents prior to plugging and abandonment of the PTF wells. The planned leaching cycle at each ISCR well (for both the PTF and commercial-scale wellfield) is anticipated to be approximately 4 years in length, followed by an estimated 2 year formation rinsing process.

At the start of the PTF wellfield rinsing demonstration, approximately 30 percent of the soluble copper mineralization will have been produced from the formation at the PTF wellfield. The leaching process has not been completed at the PTF wellfield and Florence Copper plans to re-activate the PTF wellfield following rinsing for continued production of copper from the PTF wells. Florence Copper will rinse the

PTF wellfield to demonstrate the water quality closure criteria can be met; however, Florence Copper does not plan to plug and abandon the PTF wells until conclusion of the leaching process and, as such, extended monitoring for rebound is not appropriate at this juncture. The commercial-scale ISCR wellfield planned by Florence Copper will encompass the PTF wellfield and the PTF wells will be incorporated into the commercial ISCR operations.

The need to provide data associated with the 1 year rebound monitoring defined in Section 2.9.2 of the Temporary APP is not necessary following the PTF rinsing demonstration because previous site studies have already shown that the formation can be rinsed to meet closure criteria after ISCR operations, and that Aquifer Water Quality Standards (AWQS) can be maintained at the ISCR wellfield years after the conclusion of rinsing. This technical memorandum presents data and information demonstrating that 1-year of post-rinsing rebound monitoring is not necessary prior to the commencement of commercial-scale ISCR operations. This technical memorandum describes a proposed 30-day rebound monitoring period that will be implemented after the PTF wellfield has been rinsed. The planned 30-day rebound monitoring period is sufficient to collect data describing geochemical equilibrium conditions in the wellfield that will be used to inform future rinsing and rebound monitoring activities.

PTF Wellfield Rinsing Demonstration

Florence Copper continues to operate the PTF wellfield, but discontinued the addition of acid to the injected fluid on 26 June 2020, in preparation of rinsing the formation. This step begins the ramp-down of the mineral dissolution process, reducing both the free acid and sulfate load in the formation, while facilitating the continued removal of dissolved constituents. Florence Copper will begin freshwater injection after the concentration of dissolved constituents has declined. Fresh water injection will be followed by the addition of amendment compounds (sodium bicarbonate and ferric) that will restore the buffering capacity of the formation and reduce the solubility of the remaining mineral constituents.

Section 2.9.2 of the Temporary APP requires that Florence Copper rinse the formation following the conclusion of ISCR operations. The process defined in the permit includes flushing the formation until the sulfate concentration reaches 750 milligrams per liter (mg/L), followed by sampling of the constituents listed in Table 4.1-7 of the Temporary APP. Continued rinsing will occur until concentrations of the constituents listed in Table 4.1-7 meet AWQS or background levels, whichever are higher.

The rinsing process defined in the Temporary APP includes continued pumping after the 750 mg/L criteria is met, and until the last regulated constituent meets the closure criteria. This will require that pumping continue after most of the constituents listed in Table 4.1-7 are below AWQS or at background, and inherently results in constituent concentrations that are lower than the required closure criteria for many of the constituents. This occurs because each individual constituent does not attain the concentration required for closure simultaneously, rather certain constituents are reduced below the closure criteria long before others. This results in the rinsing of the majority of constituents well below the required closure criteria before the last constituent meet closure criteria, effectively over-rinsing the formation. The rinsing process removes dissolved mineral material and associated constituents leaving behind solid residual mineral material and groundwater in the bedrock oxide zone. This process was demonstrated by rinsing of the BHP pilot-scale wellfield and by laboratory analyses conducted by Florence Copper using core and water samples collected from the PTF wellfield area prior to ISCR operations. The results of these studies are described further below.

Section 2.9.2 of the Temporary APP requires that Florence Copper conduct water quality monitoring after the conclusion of rinsing to determine if concentrations of constituents listed in Table 4.1-7 rebound. Sampling is required at intervals of 1 month, 6 months, and 1 year after the conclusion of rinsing. The intent of this monitoring is to determine if concentrations of constituents listed in Table 4.1-7 have increased above closure limits following the cessation of rinsing, and prior to the plugging and abandonment of the wells. Constituent concentrations that increase slightly, but that do not exceed closure limits do not require action. Given the relationship between pH and solubility of metals, rebound would require the pH of the formation to decrease following the addition of neutralizing agents. Similarly, rebound of constituents derived from mineral solubility would require mineral dissolution to resume after neutralizing agents have been added. Laboratory testing conducted by Florence Copper has demonstrated that these constituents do not increase in solubility after the addition of the amendment compounds.

The rebound monitoring described in Section 2.9.2 of the Temporary APP is a prerequisite for the closure of the wellfield, for the purpose of determining if further actions are required to rinse the formation prior to plugging and abandonment of the PTF wells. Given that the leaching process is not completed, Florence Copper does not plan to plug and abandon the PTF wells until the economically recoverable soluble copper has been recovered from the formation.

Previous studies conducted at the Florence Copper site have demonstrated both that the formation can be rinsed to meet closure criteria following ISCR operations, and that AWQS are still met years after the completion of rinsing. These studies include the pilot-scale ISCR wellfield constructed, operated, and rinsed by BHP at the Florence Copper Site in 1997-98, and laboratory studies conducted by Florence Copper using core samples collected from the PTF wellfield area.

BHP TEST WELLFIELD RINSING AND REBOUND OBSERVATIONS

BHP Copper conducted a limited injection and recovery test at the Florence Copper site in late 1997 and early 1998 for the purpose of demonstrating the feasibility of hydraulic control of ISCR fluids. The test successfully demonstrated that hydraulic control could be maintained within the orebody during ISCR operations. During the test, BHP injected a raffinate solution of similar composition to that used by Florence Copper at the PTF wellfield. Following completion of the test, BHP rinsed the formation using a procedure similar to the first rinsing phase planned by Florence Copper. To make the rinsing program more robust, Florence Copper will include the addition of amendment compounds that will restore buffering capacity to the formation and reduce solubility of residual mineral constituents.

Following the conclusion of the hydraulic control test, BHP successfully rinsed the formation to the point that they achieved the closure criteria set forth in the associated 1997 APP (AWQS) by April 2001. However, without the use of any neutralizing or buffering agents, the period of time it took BHP to achieve the closure criteria was lengthened, and the solubility of residual mineral constituents was not fixed.

The closure criteria set forth in the 1997 APP required that BHP rinse the formation until the sulfate concentration reached 750 mg/L and then continue rinsing until water quality met AWQS. Following completion of ISCR operations, BHP successfully rinsed the formation until these criteria were met (with the exception of the radium at three wells as described below). The sulfate concentration dropped to 750 mg/L at the BHP wellfield in December 1999, and AWQS were met in April 2001. It is important to note that AWQS may have been met earlier than the April 2001 sample event, but samples were only collected at an annual frequency. BHP and the subsequent site owner both conducted rinsing at a slower rate than planned by Florence Copper and unlike Florence Copper's plan, did not apply any neutralizing amendments.

As described above, rinsing of the BHP wellfield showed that the individual constituents did not simultaneously attain concentrations required for closure, and during the rinsing process the majority of constituents were below the required closure criteria before the last constituent met the closure criteria. This finding was also reflected in the laboratory testing conducted by Florence Copper and described further below.

The BHP wellfield was successfully rinsed to meet AWQS for all constituents, except radium at three wells (BHP-2, BHP-12, and OBW-4). All AWQS metals remained below their detection limits except radium at these three wells. The radium concentration at these wells is believed to be naturally occurring given that concentrations of all other constituents decreased during rinsing, and well OWB-4 is an observation well that was not used for either injection or recovery of ISCR solutions. No background samples were collected from the BHP test wellfield prior to the pilot-scale ISCR test, consequently, the radium concentration at these wells before BHP conducted the hydraulic control test is unknown.

When Florence Copper acquired the site in 2010, they sampled the BHP wellfield and found that water quality at each of the wells still met AWQS with the exception of radium at wells BHP-2, BHP-12, and OBW-4. The analytical results from the June 2010 sampling event are shown in Table 1. These sample results confirmed that the water quality constituents analyzed continued to meet AWQS more than 10 years after BHP rinsed the test wellfield down to a sulfate concentration of 750 mg/L (December 1999), with the exception of radium at wells BHP-2, BHP-12, and OBW-4.

CORE SAMPLE LEACH AND RINSE TESTING

Florence Copper conducted a series of laboratory leaching and rinsing tests to demonstrate the feasibility of recovering copper using ISCR methods and that rinsing could achieve the closure criteria. The test apparatus consisted of seven pressurized leach cells connected in series to leach approximately 15 feet of intact core collected from the PTF wellfield area. The samples for testing were selected based on geological core logs representative of the range of metallurgical and geological conditions in the orebody. The test provides a solution to ore contact length equivalent to approximately one-fifth of the full-scale PTF wellfield. Groundwater obtained from a well at the Florence Copper site was used to prepare leaching and rinsing solutions for the laboratory testing.

The leach portion of the test was conducted in closed cycle with the pregnant leach solution (PLS) treated via solvent extraction and returned to the leach as raffinate after returning the acid strength to 10 grams per liter. The tests applied the same reagents used to constitute raffinate at the PTF wellfield, and the same reagents planned for use during rinsing of the PTF wellfield. This series of tests were used by Florence Copper to optimize the rinsing process to include three phases consisting of:

1. Displacement of leach solutions by pumping;
2. Adjustment of pH and calcium fixation; and
3. Fixation of dissolved metals.

The rinsing process used by BHP only included the first phase described above, displacement of leach solutions by pumping. Displacement of the leach solutions is an important step; however, the laboratory testing conducted by Florence Copper showed that the addition of neutralizing agents will restore buffering capacity to the formation and reduce the solubility of the remaining mineral material, further reducing the likelihood of rebound. The relationship between pH and sulfate concentration is shown in Figure 1. The data plotted on Figure 1 shows that the addition of neutralizing amendments helped bring the sulfate concentration down to 250 mg/L during the rinsing portion of the test.

The addition of neutralizing agents raises the pH within the formation and permanently reduces the solubility of residual mineral material by converting highly soluble calcium sulfate into less soluble calcium carbonate and fixing dissolved metals. The formation rinsing conducted by BHP successfully met closure criteria without the addition of any neutralizing agents to buffer the formation and reduce the solubility of residual mineral material. The addition of neutralizing agents will help expedite rinsing, restore buffering capacity to the formation, and further reduce the potential for rebound of dissolved constituents.

The laboratory analyses conducted by Florence Copper have shown that a 30-day rest period is sufficient time to collect data describing geochemical equilibrium of the solid phase minerals fixed during the rinsing process described above. During the planned 30-day monitoring period, hydraulic control will be suspended, and the wellfield will remain dormant. This is a sufficient period of time to identify any constituents that will solubilize, and to collect data regarding both the behavior of the constituents and the geochemical conditions. These data will be used to support geochemical analysis of post-rinsing conditions and geochemical modeling of long-term equilibrium of the residual solid phase mineral constituents.

Proposed Rebound Monitoring at the PTF Wellfield

Florence Copper proposes the following rebound monitoring program to be applied at the PTF wellfield:

1. Rest the wellfield for a period of 30 days with hydraulic control pumping discontinued following completion of the three rinsing phases and achievement of closure criteria.
2. Collect samples from the PTF injection and recovery wells for analysis of constituents listed in Table 4.1-7.

3. After 30 days of resting the wellfield, submit analysis of the geochemical conditions and describe measures to be taken to reduce rebound, if necessary, during future rinsing of the commercial ISCR wells. Analysis of the geochemical conditions will include geochemical modeling of the long-term equilibrium of the residual solid phase mineral constituents.
4. Summarize rebound observations in an addendum to the pre-operational report.

During commercial operations, Florence Copper will conduct rebound monitoring of closed resource blocks at 30-day, 6-month, and 1-year intervals prior to plugging and abandonment of ISCR wells.

Conclusion

Formation rinsing conducted at the BHP wellfield following the 1997-98 BHP hydraulic control test demonstrated that formation could be rinsed to meet AWQS following ISCR operations. The rinsing conducted by BHP was done by flushing the formation with fresh water only, without the addition of neutralizing agents. Sampling conducted in 2010 confirmed that groundwater in the BHP wellfield met AWQS approximately 9 years after closure criteria had first been met.

Florence Copper has conducted laboratory testing of core samples collected from the PTF wellfield area, which has confirmed the BHP rinsing results. This testing has also provided information supporting refinement of the planned rinsing process. The addition of neutralizing agents, as shown in the testing conducted by Florence Copper, improves the rinsing process by restoring buffering capacity to the formation, and fixing both residual mineral constituents and metals, inhibiting further dissolution after conclusion of rinsing. Based on findings from rinsing the BHP wellfield and laboratory analyses conducted by Florence Copper, sufficient data exist to characterize the effectiveness of rinsing and the potential for rebound at the PTF wellfield.

Florence Copper has started the process to rinse the formation at the PTF wellfield, and will demonstrate the effectiveness of rinsing to meet AWQS and water quality parameters as specified in the Temporary APP. Based on the BHP rinsing experience and subsequent site-specific laboratory analyses, little to no rebounding is anticipated, therefore Florence Copper proposes to monitor the PTF wellfield for a period of 30 days after rinsing is completed. This is a sufficient period of time to identify any constituents that will solubilize, and to collect data regarding both the behavior of the constituents and the geochemical conditions. This data will be used to support geochemical analysis of post-rinsing conditions and geochemical modeling of long-term equilibrium of the residual solid phase mineral constituents.

Florence Copper agrees that monitoring for rebound of dissolved constituents is important before the plugging and abandonment of ISCR wells and plans to do so, in accordance with permit conditions, before closure of the commercial ISCR wellfield. The 1-year rebound monitoring described in the APP was intended to be implemented if ISCR operations at the PTF did not prove to be successful and Florence Copper chose not to proceed with commercial-scale ISCR operations. If this had occurred, the wellfield would have required closure at the conclusion of the test. As stated above, the PTF wellfield has proven to be a successful demonstration of ISCR methods and hydraulic control at the Poston Butte ore body. As a result of this success and in accordance with the original project plan,, Florence Copper has submitted applications to proceed with commercial-scale ISCR operations. Given that sufficient data exist to characterize the effectiveness of rinsing even if rebounding should occur, Florence Copper's proposal to conduct final rebound testing following closure of commercial operations is scientifically sound and reasonable.

Please contact Mark Nicholls with any questions you may have regarding the content of this Technical Memorandum.

Enclosures:
Table 1 – 2010 BHP Wellfield Monitoring Results
Figure 1 – SO4 and pH During Rinsing (PRT #35)

TABLE

TABLE 1
2010 BHP WELLFIELD MONITORING RESULTS
FLORENCE COPPER INC.
FLORENCE, ARIZONA

Analyte		Units	Well ID	Injection/Pumping Wells				Recovery Wells											Observation Wells			
				BHP-6	BHP-7	BHP-8	BHP-9	BHP-1	BHP-2	BHP-3	BHP-4	BHP-5		BHP-10	BHP-11	BHP-12		BHP-13	OWB-1	OWB-3	OWB-4	OWB-5
			AWQS	6/24/2010	6/24/2010	6/24/2010	6/24/2010	6/28/2010	6/24/2010	6/24/2010	6/28/2010	6/24/2010	6/24/2010 (Duplicate)	6/28/2010	6/28/2010	6/28/2010	6/28/2010 (Duplicate)	6/28/2010	6/28/2010	6/24/2010	6/28/2010	6/24/2010
Field Parameters	Temperature	°C	NE	25	24.7	24.1	24.3	24	24.8	24.8	25	24.1	NA	25.5	26	24.2	NA	24.7	24.4	24.4	27.4	25.7
	Temperature	°F	NE	77	76.5	75.4	75.7	75.2	76.6	76.6	77	75.4	NA	77.9	78.8	75.6	NA	76.5	75.9	75.9	81.3	78.3
	pH	SU	NE	4.24	5.02	4.51	4.51	6.04	7.4	7.21	6.57	6.21	NA	6.92	7.61	7.01	NA	7.7	7.72	7.43	7.04	7.57
	Conductivity	µmhos/cm	NE	823	676	932	747	989	819	832	1146	809	NA	785	848	926	NA	817	825	1053	868	825
Indicator Suite	Magnesium	mg/L	NE	13	9	18	12	24	13	14	26	16	16	16	15	20	20	14	15	20	17	13
	Sulfate		NE	169	83	238	137	212	60	62	283	127	128	56	84	141	135	54	51	203	97	58
	Fluoride		4	0.85	0.63	1	0.99	1	0.52	0.89	0.96	1	0.98	1.3	<0.4	0.87	0.68	<0.4	<0.4	0.56	0.58	0.64
	Total Dissolved Solids		NE	550	500	760	530	650	470	520	880	520	510	470	540	600	580	500	500	670	580	510
Common Ions	Total Alkalinity	mg/L	NE	<6	6	<6	<6	60	140	140	96	51	51	120	140	110	110	150	150	140	130	140
	Calcium		NE	51	31	64	42	85	63	63	110	54	53	54	69	81	79	64	65	98	71	61
	Chloride		NE	140	140	140	140	150	140	140	140	140	140	140	140	140	140	140	140	140	140	140
	Nitrate as N		10	0.39	0.55	0.54	0.4	0.53	0.38	0.42	0.44	0.46	0.45	0.39	0.4	0.49	0.48	0.47	0.41	0.44	0.44	0.34
	Potassium		NE	4.2	3.7	5.2	4.5	5	4.8	5.3	6.4	4.8	4.7	4.2	4.5	4.8	4.7	4.4	4.4	5.4	4.6	4.3
	Sodium		NE	71	73	85	73	82	78	79	98	79	79	85	88	87	89	84	84	92	86	77
	Silica		NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	pH (Lab)	SU	NE	4.39	5.31	4.73	4.7	7.06	7.73	7.47	7.53	6.3	6.29	7.86	8.1	7.71	7.8	8.18	8.13	7.61	7.92	7.75
	Ion Balance	NA	NE	-1.63	-1.14	0.64	-1.08	1.6	1.34	1.82	2.81	0.72	0.38	4.43	3.75	4.47	6.03	3.66	4.89	1.13	3.94	0.55
Trace Metals	Aluminum	mg/L	NE	0.84	0.32	1.1	0.89	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Antimony		0.006	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
	Arsenic		0.05	0.013	0.013	0.008	0.011	0.002	0.002	0.002	0.002	0.005	0.006	0.004	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002
	Barium		2	0.013	0.026	0.018	0.014	0.036	0.043	0.058	0.025	0.0071	0.0073	0.0074	0.019	0.041	0.04	0.027	0.024	0.025	0.03	0.022
	Beryllium		0.004	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Cadmium		0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Chromium		0.1	<0.001	<0.001	<0.001	0.001	<0.001	0.001	0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.001	0.002	0.001	<0.001	0.001	0.001
	Cobalt		NE	0.034	0.021	0.053	0.03	0.008	<0.001	<0.001	0.002	0.015	0.016	<0.001	<0.001	0.001	0.001	<0.001	0.001	<0.001	0.001	0.001
	Copper		NE	11	3	14	9	1.2	0.062	0.07	0.44	2.6	2.6	0.12	0.064	0.38	0.38	0.016	0.035	0.015	0.12	0.008
	Iron		NE	0.57	<0.05	0.6	0.053	0.063	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Lead		0.05	<0.001	<0.001	0.002	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Manganese		NE	0.48	0.25	0.64	0.42	0.27	<0.005	0.012	0.045	0.24	0.24	0.006	<0.005	0.037	0.038	<0.005	<0.005	<0.005	<0.005	<0.005
	Mercury		0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	Nickel		0.1	0.035	0.023	0.053	0.043	0.033	0.003	0.004	0.015	0.022	0.022	0.006	0.003	0.015	0.016	0.003	0.003	0.004	0.004	0.002
	Selenium		0.05	0.003	0.002	0.008	0.003	0.003	<0.002	<0.002	0.002	0.003	0.003	<0.002	0.002	0.002	<0.002	<0.002	0.003	<0.002	0.004	0.002
	Thallium		0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc		NE	0.05	0.022	0.064	0.044	0.039	<0.01	<0.01	0.014	0.025	0.027	<0.01	<0.01	0.025	0.017	<0.01	<0.01	<0.01	<0.01	<0.01
Radiochemistry	Gross Alpha	pCi/L	NE	11.4 ± 1.9	3.0 ± 0.9	8.1 ± 1.6	6.3 ± 1.4	6.9 ± 1.3	17.0 ± 2.0	13.0 ± 1.8	14.3 ± 2.0	7.6 ± 1.3	6.7 ± 1.4	5.5 ± 1.1	13.2 ± 1.9	16.9 ± 2.1	18.1 ± 2.3	13.8 ± 1.9	7.8 ± 1.4	8.8 ± 1.4	19.4 ± 2.3	10.0 ± 1.5
	Uranium		NE	NA	NA	NA	NA	NA	7.2 ± 0.6	NA	NA	NA	NA	NA	NA	11.6 ± 0.9	11.3 ± 0.8	NA	NA	NA	9.6 ± 0.7	NA
	Adjusted Gross Alpha		15	NA	NA	NA	NA	NA	9.8 ± 2.1	NA	NA	NA	NA	NA	NA	5.3 ± 2.3	6.8 ± 2.4	NA	NA	NA	9.8 ± 2.4	NA
	Radium 226		NE	2.4 ± 0.3	NA	2.3 ± 0.3	1.6 ± 0.2	0.8 ± 0.1	4.3 ± 0.5	2.0 ± 0.2	3.2 ± 0.3	1.7 ± 0.2	2.3 ± 0.3	0.4 ± 0.1	1.3 ± 0.2	3.8 ± 0.4	6.7 ± 0.7	2.7 ± 0.3	<0.8	2.3 ± 0.3	5.7 ± 0.6	1.6 ± 0.2
	Radium 228		NE	<0.4	NA	2.3 ± 0.6	<0.5	0.5 ± 0.4	1.5 ± 0.6	<0.6	0.9 ± 0.3	1.1 ± 0.5	<0.5	0.4 ± 0.4	1.4 ± 0.4	0.6 ± 0.3	<0.4	1.8 ± 0.4	<0.6	<0.7	1.3 ± 0.6	<0.5
	Total Radium		5	2.4 ± 0.3	NA	4.6 ± 0.7	1.6 ± 0.2	1.3 ± 0.4	5.8 ± 0.8	2.0 ± 0.2	4.1 ± 0.4	2.8 ± 0.5	2.3 ± 0.3	0.8 ± 0.4	2.7 ± 0.4	4.4 ± 0.5	6.7 ± 0.7	4.5 ± 0.5	<0.8	2.3 ± 0.3	7.0 ± 0.6	1.6 ± 0.2
Organic Compounds	Benzene	mg/L	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Ethylbenzene		0.7	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Toluene		1	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
	Total Xylenes		10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Total Petroleum Hydrocarbons-Diesel		NE	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Notes:

< = less than detection limit

NA = Not sampled or not analyzed

AWQS = Arizona Aquifer Water Quality Standard

NE = Not established

Radium 226 and Radium 228 are analyzed when Gross Alpha exceeds 5.0 Uranium is analyzed when Gross Alpha exceeds 15.0

Total Radium = Radium 226 + Radium 228

All reported radiochemistry results have a standard deviation of two (pCi/L ± 2)

pCi/L = pico-curies per liter +/- a standard deviation of two (pCi/L ± 2)

mg/L = milligrams per liter

µmhos/cm = micromhos per centimeter

°C = degrees Celsius

°F = degrees Fahrenheit

FIGURE

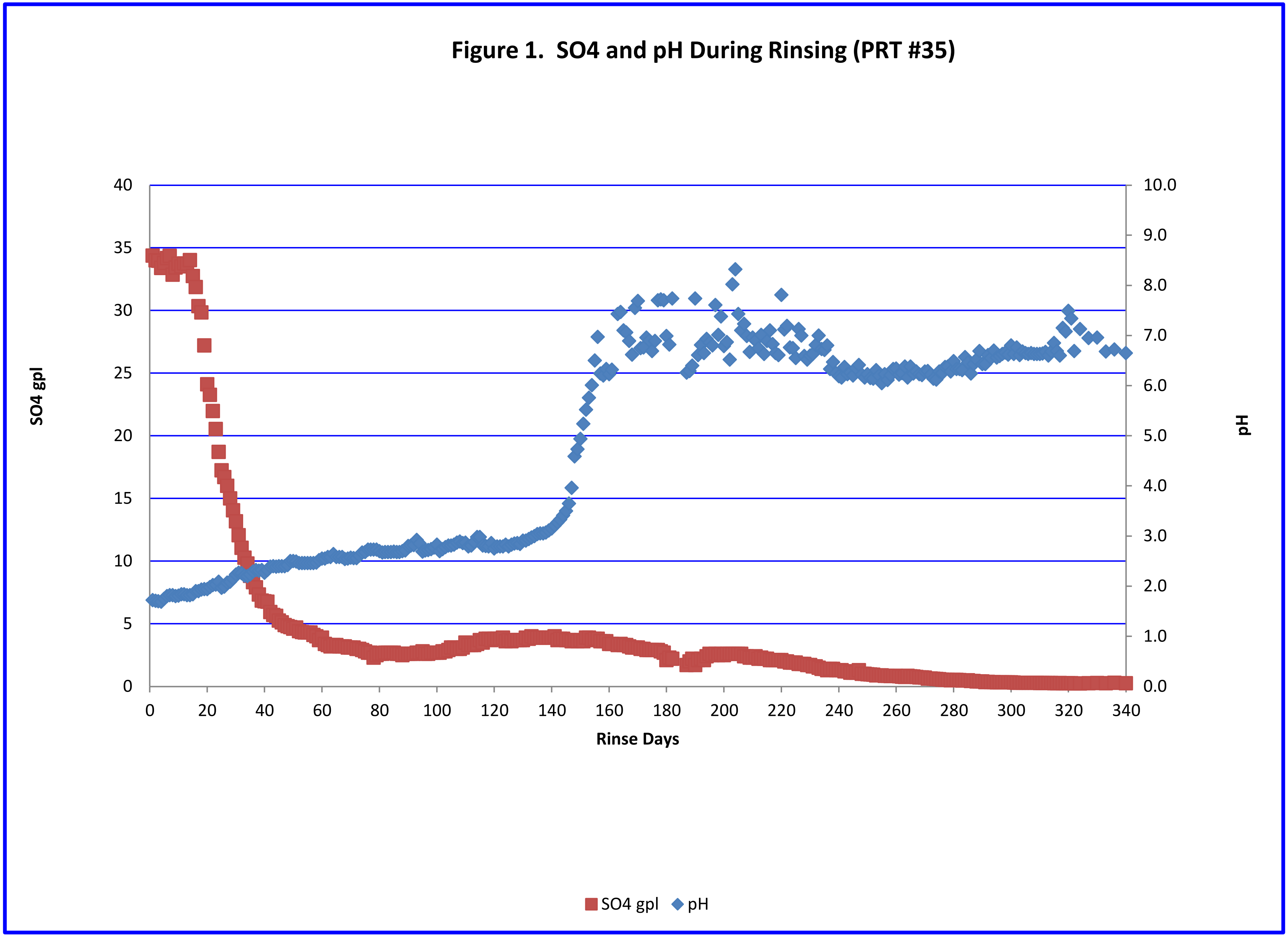
Figure 1. SO4 and pH During Rinsing (PRT #35)
SO4 gpl
pH
Rinse Days
40
35
30
25
20
15
10
5
0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
SO4 gpl
pH